

U.S. DEPARTMENT of TRANSPORTATION – FEDERAL AVIATION ADMINISTRATION
GRAPHIC DEPARTURE PROCEDURE (DP)

Bearings, headings, courses, tracks, and radials are magnetic. Elevation and altitudes are in feet MSL. Altitudes are minimum altitudes unless otherwise indicated. Ceilings are in feet above airport elevation.
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DP Name	Number	DP Computer Code	Superseded Number	Dated	Effective Date
NORWOOD	TWO	OWD2.OWD	ONE	27 JUN 2013	26 MAY 2016

TYPE: SID

DP ROUTE DESCRIPTION:

TAKEOFF RWY 10: CLIMB HEADING 103.74 TO 1100, THEN AS ASSIGNED BY ATC, THENCE...
 TAKEOFF RWY 17: CLIMB HEADING AS ASSIGNED BY ATC, THENCE...
 TAKEOFF RWY 28: CLIMB HEADING 283.76 TO 700, THEN AS ASSIGNED BY ATC, THENCE...
 TAKEOFF RWY 35: CLIMB HEADING 280 CW 330 AS ASSIGNED BY ATC, THENCE...

...EXPECT RADAR VECTORS TO ASSIGNED ROUTE/NAVAID/FIX. MAINTAIN 2000.
 EXPECT CLEARANCE TO FILED ALTITUDE/FLIGHT LEVEL WITHIN TEN (10) MINUTES AFTER DEPARTURE.

TRANSITION ROUTES (GRAPHIC DEPICTION ONLY):

Transition Name	Transition Computer Codes	From FIX/NAVAID	To FIX/NAVAID	Course	Distance	MEA	MOCA	Crossing Altitudes/Fixes

PROCEDURAL DATA NOTES/TAKEOFF MINIMUMS:

NOTE: RADAR REQUIRED.
 NOTE: NON RNAV EQUIPPED AIRCRAFT CAN EXPECT VECTORS ON ASSIGNED ROUTE. NOTE: BLZZR DEPARTURES EXPECT VECTORS ON BOS R-273, DME REQUIRED.
 NOTE: BRUWN DEPARTURES EXPECT VECTORS ON BOS R-159, DME REQUIRED.
 NOTE: CELTK DEPARTURES EXPECT VECTORS ON BOS R-114.
 NOTE: HYLND DEPARTURES EXPECT VECTORS ON BOS R-350.
 NOTE: PATSS DEPARTURES EXPECT VECTORS ON BOS R-260, DME REQUIRED.
 NOTE: REVSS DEPARTURES EXPECT VECTORS ON BOS R-285, DME REQUIRED.
 NOTE: SSOXS DEPARTURES EXPECT VECTORS ON BOS R-177.

TAKEOFF MINIMUMS:

RWY 10, 300-2 1/4 OR STANDARD WITH MINIMUM CLIMB OF 340 FT PER NM TO 500.
 RWY 17, 300-2 1/4 OR STANDARD WITH MINIMUM CLIMB OF 220 FT PER NM TO 500, OR ALTERNATIVELY, WITH STANDARD TAKEOFF MINIMUMS AND A NORMAL 200FT PER NM CLIMB GRADIENT, TAKEOFF MUST OCCUR NO LATER THAN 1700 FT PRIOR TO DER.
 RWY 28, 400-2 OR STANDARD WITH MINIMUM CLIMB OF 385 FT PER NM TO 500.
 RWY 35, 400-2 1/2 OR STANDARD WITH MINIMUM CLIMB OF 230 FT PER NM TO 500, OR ALTERNATIVELY, WITH STANDARD TAKEOFF MINIMUMS AND A NORMAL 200 FT PER NM CLIMB GRADIENT, TAKEOFF MUST OCCUR NO LATER THAN 2100 FT PRIOR TO DER.

TAKEOFF OBSTACLES NOTES:

NOTE: RWY 10, TREES 225 FT FROM DER, 341 FT LEFT OF CENTERLINE, 53 FT AGL/97 FT MSL. TREES 1641 FT FROM DER, 33 FT LEFT OF CENTERLINE, 73 FT AGL/118 FT MSL. TREES 75 FT FROM DER, 302 FT RIGHT OF CENTERLINE, 15 FT AGL/63 FT MSL. TREES 4561 FT FROM DER, 1005 FT RIGHT OF CENTERLINE, 87 FT AGL/215 FT MSL. TREES 4244 FT FROM DER, 1228 FT RIGHT OF CENTERLINE, 98 FT AGL/211 FT MSL. TREES 1.2 NM FROM DER, 238 FT RIGHT OF CENTERLINE, 89 FT AGL/242 FT MSL

QUALITY
15
CHECKED

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NOTE: RWY 17, TREES 42 FT FROM DER, 507 FT LEFT OF CENTERLINE, 33 FT AGL/76 FT MSL. TREES 2777 FT FROM DER, 273 FT RIGHT OF CENTERLINE, 78 FT AGL/126 FT MSL. TREES 2742 FT FROM DER, 291 FT LEFT OF CENTERLINE, 73 FT AGL/121 FT MSL. TREES 2192 FT FROM DER, 444 FT LEFT OF CENTERLINE, 64 FT AGL/106 FT MSL. TREES 1.8 NM FROM DER, 3332 FT RIGHT OF CENTERLINE, 100 FT AGL/350 FT MSL. TREES 2979 FT FROM DER, 667 FT RIGHT OF CENTERLINE, 76 FT AGL/124 FT MSL. TREES 2111 FT FROM DER, 616 FT RIGHT OF CENTERLINE 68 FT AGL/114 FT MSL.

NOTE: RWY 28, TREES 932 FT FROM DER, 463 FT LEFT OF CENTERLINE, 74 FT AGL/131 FT MSL. TREES 2352 FT FROM DER, 157 FT LEFT OF CENTERLINE, 75 FT AGL/172 FT MSL. TREES 2868 FT FROM DER, 41 FT LEFT OF CENTERLINE, 81 FT AGL/188 FT MSL. STACK 6004 FT FROM DER, 1246 FT LEFT OF CENTERLINE, 103 FT AGL/224 FT MSL. STACK 5559 FT FROM DER, 651 FT LEFT OF CENTERLINE, 117 FT AGL/234 FT MSL. SPIRE 1.6 NM FROM DER, 311 FT LEFT OF CENTERLINE, 98 FT AGL/335 FT MSL. TREE 610 FT FROM DER, 544 FT RIGHT OF CENTERLINE, 71 FT AGL/119 FT MSL. TOWER 4465 FT FROM DER, 238 FT RIGHT OF CENTERLINE, 157 FT AGL/262 FT MSL. SPIRE 6044 FT FROM DER, 1320 FT RIGHT OF CENTERLINE, 143 FT AGL/284 FT MSL. TOWER 1.7 NM FROM DER, 723 FT RIGHT OF CENTERLINE, 132 FT AGL/386 FT MSL. TREES 1.9 FT FROM DER, 722 FT RIGHT OF CENTERLINE, 100 FT AGL/339 FT MSL.

NOTE: RWY 35, TREES 647 FT FROM DER, 625 FT LEFT OF CENTERLINE, 72 FT AGL/120 FT MSL. TREES 2791 FT FROM DER, 478 FT LEFT OF CENTERLINE, 75 FT AGL/124 FT MSL. TREE 3123 FT FROM DER, 598 FT LEFT OF CENTERLINE, 83 FT AGL/133 FT MSL. POLE 5856 FT FROM DER, 936 FT RIGHT OF CENTERLINE, 155 FT AGL/216 FT MSL. POLE 5686 FT FROM DER, 769 FT RIGHT OF CENTERLINE, 150 FT AGL/211 FT MSL. TREES 1557 FT FROM DER, 787 FT RIGHT OF CENTERLINE, 80 FT AGL/125 FT MSL.

CONTROLLING OBSTACLES:

RWY 10: 237 FT MSL TREES 421124.41N/0710849.69W. 346 FT MSL TREES 421155.85N/0710718.21W.
 RWY 17: 257 FT MSL TREES 421004.26N/0710909.12W. 346 FT MSL TREES 420909.52N/0710954.94W.
 RWY 28: 262 FT MSL TOWER 421133.00N/0711142.00W. 365 FT MSL TREES 421136.07N/0711257.65W.
 RWY 35: 306 FT MSL TREES 421245.98N/0711158.64W. 364 FT MSL SPIRE 421251.74N/0711245.65W.

OBSTACLES MANDATING ODP ROUTE DEVELOPMENT:

RWY 10 - 870 FT MSL TOWER 421242.00N/0710648.00W. RWY 28 -1449 FT MSL TOWER 421837.00N/0711412.00W. RWY 35 -1449 FT MSL TOWER 421837.00N/0711412.00W.

LOST COMMUNICATIONS PROCEDURES:

ADDITIONAL FLIGHT DATA:

CHART: BOS R-273/35.3 DME AT BLZZR. CHART: BOS R-159/56.6 DME AT BRUWN.
 CHART: BOS R-114/39.8 DME AND LFV R-005/15.2 DME AT CELTK. CHART: BOS R-350/28.4 DME AND PSM R-243/26.7 DME AT HYLND. CHART: BOS R-260/36.0 DME AT PATSS.
 CHART: BOS R-285/36.5 DME AT REVSS.
 CHART: BOS R-177/33.1 DME AND PVD R-091/31.4 DME AT SSOXS.
 CHART: BOS R-048/31 DME AT LBSTA.
 CHART: BAF R-107/24.9 DME AT ONEPS.
 CHART: TOP ALTITUDE: 2000

AIRPORTS SERVED:

NORWOOD MEMORIAL, NORWOOD, MA

COMMUNICATIONS:

ATIS, CLEARANCE DELIVERY, GROUND CONTROL, TOWER, DEPARTURE CONTROL



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FIXES AND/OR NAVAIDS:

ACK VOR/DME, BAF VORTAC, BOS VOR/DME, CMK VOR/DME, CTR VOR/DME, ENE VOR/DME, LFV VOR/DME, MHT VOR/DME, MVY VOR/DME, PSM VOR/DME,
PVD VOR/DME, SEY VOR/DME, BLZZR, BOSOX, BRUWN, BURDY, CELTK, DUNKK, FREDO, FRILL, GLYDE, HYLND, LBSTA, BUZRD, CAM VOR/DME, SYR VORTAC.

REMARKS:



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CHANGES:

1. ADDED: CHART: TOP ALTITUDE: 2000
2. UPDATED TAKEOFF OBSTACLES

REASONS:

1. ATC REQUEST.
2. TAKEOFF MINIMUMS AND OBSTACLE DEPARTURE PROCEDURES (ODP), AMDT 7, 29 MARCH 2014

DEPARTURE (DATA RECORD)

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ARINC SUMMARY - KOWD

ROUTES

TRANSITION	WPT SEQ	WPT NAME	LEG TYPE	FB/FO	RNP	MAG CRS	REC NAV	ANGLE	TURN DIR	CENTER FIX	TURN RADIUS	ALTITUDE DESCRIPTION & VALUE	SPEED LIMIT DESCRIPTION & VALUE	WPT DESCRIPTION CODE
RW10	010		VA	FB		103.7						AA 01100		
RW10	020		VM	FB		103.7								E
RW17	010		VM	FB		169.8								E
RW28	010		VA	FB		283.8						AA 00700		
RW28	020		VM	FB		283.8								E
RW35	010		VM	FB		349.8								E

RUNWAYS

RUNWAY	THRESHOLD LATITUDE	THRESHOLD LONGITUDE	THRESHOLD ELEVATION
RW10	N421131.81	W0711029.52	00048
RW17	N421137.65	W0711040.34	00049
RW28	N421132.41	W0710952.39	00047
RW35	N421101.83	W0711017.64	00047

QUALITY
15
CHECKED